

## RAW SEQUENCE LISTING

EFS

The Biotechnology Systems Branch of the Scientific and Technical  
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Application Serial Number: 10/551,105A  
Source: 1FWD  
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## RAW SEQUENCE LISTING

DATE: 02/20/2007

PATENT APPLICATION: US/10/551,105A

TIME: 11:21:27

Input Set : N:\efs\02\_20\_07

\10551105a\_efs\Sequence\_Listings\_CHM003\_ST25.txt

Output Set: N:\CRF4\02202007\J551105A.raw

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3 <110> APPLICANT: Whitsett, Jeffrey A
5 <120> TITLE OF INVENTION: USE OF FGF-18 PROTEIN, TARGET PROTEINS AND THEIR RESPECTIVE
6   ENCODING NUCLEOTIDE SEQUENCES TO INDUCE CARTILAGE FORMATION
8 <130> FILE REFERENCE: CHM-003
10 <140> CURRENT APPLICATION NUMBER: 10/551,105A
11 <141> CURRENT FILING DATE: 2005-09-26
13 <150> PRIOR APPLICATION NUMBER: US 60/458,224
14 <151> PRIOR FILING DATE: 2003-03-27
16 <150> PRIOR APPLICATION NUMBER: PCT/US04/09264
17 <151> PRIOR FILING DATE: 2004-03-26
19 <160> NUMBER OF SEQ ID NOS: 14
21 <170> SOFTWARE: PatentIn version 3.4
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 624
25 <212> TYPE: DNA
26 <213> ORGANISM: House Mouse
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33 acgcgggctc gagatgatgt gagtcggaag cagctgcgct tgtaccagct ctatagcagg      180
35 accagtggga agcacattca agttctgggc cgtaggatca gtgcccgtag cgaggacggg      240
37 gacaagtatg cccagctcct agtggagaca gataccttcg ggagtcaagt ccggatcaag      300
39 ggcaaggaga cagaattcta cctgtgtatg aaccgaaaag gcaagctcgt ggggaagcct      360
41 gatggtacta gcaaggagtg cgtgttcatt gagaagggttc tggaaaacaa ctacacggcc      420
43 ctgatgtctg ccaagtactc tggttggtat gtgggcttca ccaagaaggg gcggcctcgc      480
45 aagggtccca agaccgcgca gaaccagcaa gatgtacact tcatgaagcg ttaccccaag      540
47 ggacaggccg agctgcagaa gcccttcaaa tacaccacag tcaccaagcg atcccggcgg      600
49 atccgccccca ctcaccccg ctag                                     624
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53 <211> LENGTH: 207
54 <212> TYPE: PRT
55 <213> ORGANISM: House Mouse
57 <400> SEQUENCE: 2
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63 Leu Leu Cys Phe Gln Val Gln Val Leu Ala Ala Glu Glu Asn Val Asp
64           20           25           30
67 Phe Arg Ile His Val Glu Asn Gln Thr Arg Ala Arg Asp Asp Val Ser
68           35           40           45
71 Arg Lys Gln Leu Arg Leu Tyr Gln Leu Tyr Ser Arg Thr Ser Gly Lys
72           50           55           60
75 His Ile Gln Val Leu Gly Arg Arg Ile Ser Ala Arg Gly Glu Asp Gly
76 65           70           75           80

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80                               85                               90                               95
83 Val Arg Ile Lys Gly Lys Glu Thr Glu Phe Tyr Leu Cys Met Asn Arg
84                               100                              105                              110
87 Lys Gly Lys Leu Val Gly Lys Pro Asp Gly Thr Ser Lys Glu Cys Val
88                               115                              120                              125
91 Phe Ile Glu Lys Val Leu Glu Asn Asn Tyr Thr Ala Leu Met Ser Ala
92                               130                              135                              140
95 Lys Tyr Ser Gly Trp Tyr Val Gly Phe Thr Lys Lys Gly Arg Pro Arg
96 145                               150                               155                               160
99 Lys Gly Pro Lys Thr Arg Glu Asn Gln Gln Asp Val His Phe Met Lys
100                               165                               170                               175
103 Arg Tyr Pro Lys Gly Gln Ala Glu Leu Gln Lys Pro Phe Lys Tyr Thr
104                               180                               185                               190
107 Thr Val Thr Lys Arg Ser Arg Arg Ile Arg Pro Thr His Pro Gly
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111 &lt;210&gt; SEQ ID NO: 3

112 &lt;211&gt; LENGTH: 1406

113 &lt;212&gt; TYPE: DNA

114 &lt;213&gt; ORGANISM: Human

116 &lt;400&gt; SEQUENCE: 3

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119 gcagctccgc gcccgggccg gagagcgcaa ctcggttcc agacccgccg cgcattgtgt      120
121 ccccggaactg agccgggagc ccagcctccc acggacgccc ggacggcccg ccggccagca      180
123 gtgagcgagc ttccccgcac cggccaggcg cctcctgcac agcggctgcc gccccgcagc      240
125 ccctgcgcca gcccggaggg cgcagcgctc gggaggagcc gcgcggggcg ctgatgccgc      300
127 agggcgcgcc gcggagcgcc ccggagcagc agagtctgca gcagcagcag ccggcgagga      360
129 gggagcagca gcagcgggcg cggcgggcgc ggcggcgccg gaggcgcccg gtcccggccg      420
131 cgcggagcgg acatgtgcag gctgggctag gagccgccc ctccctccc cccagcgatg      480
133 tattcagcgc cctccgcctg cacttgccctg tgtttacact tcctgctgct gtgcttccag      540
135 gtacaggtgc tggttgccga ggagaacgtg gacttccgca tccacgtgga gaaccagacg      600
137 cgggctcggg acgatgtgag ccgtaagcag ctgcggctgt accagctcta cagccggacc      660
139 agtgggaaac acatccaggt cctgggcccgc aggatcagtg cccgcggcga ggatggggac      720
141 aagtatgccc agctcctagt ggagacagac accttcggtg gtcaagtccg gatcaagggc      780
143 aaggagacgg aattctacct gtgcatgaac cgcaaaggca agctcgtggg gaagcccgat      840
145 ggcaccagca aggagtgtgt gttcatcgag aaggttcttg agaacaacta cacggccctg      900
147 atgtcggcta agtactccgg ctggtacgtg ggcttcacca agaagggcg gccgcggaag      960
149 ggccccaaga cccgggagaa ccagcaggac gtgcatttca tgaagcgcta cccaagggg      1020
151 cagccggagc ttcagaagcc cttcaagtac acgacggtga ccaagaggtc ccgtcggatc      1080
153 cggcccacac accctgccta ggccacccc cgcggccct caggtcgccc tggccacact      1140
155 cacactccca gaaaactgca tcagaggaat atttttacat gaaaaataag gattttattg      1200
157 ttgacttgaa acccccgatg acaaaaagact cacgcaaagg gactgtagtc aaccacagg      1260
159 tgcttgctc tctctaggaa cagacaactc taaactcgtc cccagaggag gacttgaatg      1320
161 aggaaaccaa cactttgaga aaccaaagtc ctttttccca aaggttctga aaggaaaaaa      1380
163 aaaaaaaaaa aaaaaaaaaa aaaaaa

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166 &lt;210&gt; SEQ ID NO: 4

167 &lt;211&gt; LENGTH: 208

168 &lt;212&gt; TYPE: PRT

169 &lt;213&gt; ORGANISM: Human

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174 1 5 10 15

177 Leu Leu Leu Cys Phe Gln Val Gln Val Leu Val Ala Glu Glu Asn Val

178 20 25 30

181 Asp Phe Arg Ile His Val Glu Asn Gln Thr Arg Ala Arg Asp Asp Val

182 35 40 45

185 Ser Arg Lys Gln Leu Arg Leu Tyr Gln Leu Tyr Ser Arg Thr Ser Gly

186 50 55 60

189 Lys His Ile Gln Val Leu Gly Arg Arg Ile Ser Ala Arg Gly Glu Asp

190 65 70 75 80

193 Gly Asp Lys Tyr Ala Gln Leu Leu Val Glu Thr Asp Thr Phe Gly Ser

194 85 90 95

197 Gln Val Arg Ile Lys Gly Lys Glu Thr Glu Phe Tyr Leu Cys Met Asn

198 100 105 110

201 Arg Lys Gly Lys Leu Val Gly Lys Pro Asp Gly Thr Ser Lys Glu Cys

202 115 120 125

205 Val Phe Ile Glu Lys Val Leu Glu Asn Asn Tyr Thr Ala Leu Met Ser

206 130 135 140

209 Ala Lys Tyr Ser Gly Trp Tyr Val Gly Phe Thr Lys Lys Gly Arg Pro

210 145 150 155 160

213 Arg Lys Gly Pro Lys Thr Arg Glu Asn Gln Gln Asp Val His Phe Met

214 165 170 175

217 Lys Arg Tyr Pro Lys Gly Gln Pro Glu Leu Gln Lys Pro Phe Lys Tyr

218 180 185 190

221 Thr Thr Val Thr Lys Arg Ser Arg Arg Ile Arg Pro Thr His Pro Ala

222 195 200 205

225 &lt;210&gt; SEQ ID NO: 5

226 &lt;211&gt; LENGTH: 2716

227 &lt;212&gt; TYPE: DNA

228 &lt;213&gt; ORGANISM: House Mouse

230 &lt;400&gt; SEQUENCE: 5

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233 tccgatgtgt tccgttacca gcgaccggca gcctgccatc gcagccccag tctgggtggg 120

235 gatcggagac aagtcccctg cagcagcggc aggcaagggtt atataggaag agaaagagcc 180

237 aggcagcgcc agagggaacg aacgagccga gcgaggaagg gagagccgag cgcaaggagg 240

239 agcgcacacg cacacacccg cgcgtacccg ctgcgcgaca gacagcgcgg ggacagctca 300

241 caagtcctca ggttccgcgg acgagatgct gctgctgctg gccagatgtt ttctggtgat 360

243 ccttgcttcc tcgctgctgg tgtgccccgg gctggcctgt gggcccggca gggggtttgg 420

245 aaagaggcgg caccaccaaaa agctgacccc tttagcctac aagcagttaa ttcccaacgt 480

247 agccgagaag accctagggg ccagcggcag atatgaaggg aagatcacia gaaactccga 540

249 acgatttaag gaactcacc ccaattacaa ccccgacatc atatttaagg atgaggaaaa 600

251 cacgggagca gaccggctga tgactcagag gtgcaaagac aagttaaatg ccttggccat 660

253 ctctgtgatg aaccagtggc ctggagtga gctgcgagtg accgagggct gggatgagga 720

255 cggccatcat tcagaggagt ctctacacta tgagggtcga gcagtggaca tcaccacgtc 780

257 cgaccgggac cgcagcaagt acggcatgct ggctgcctg gctgtggaag caggtttcga 840

259 ctgggtctac tatgaatcca aagctacat ccactgttct gtgaaagcag agaactccgt 900

261 ggcgccaaa tccggcggct gtttccggg atccgccacc gtgcacctgg agcagggcgg 960

263 caccaagctg gtgaaggact tacgtcccgg agaccgcgtg ctggcggctg acgaccaggg 1020

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265 cccgctgctg tacagcgact tcctcacctt cctggaccgc gacgaaggcg ccaagaaggt 1080
267 cttctacgtg atcgagacgc tggagccgcg cgagcgctg ctgctcaccg ccgcgcacct 1140
269 gctcttcgtg gcgcccgcaca acgactcggg gccacgccc gggccaagcg cgctctttgc 1200
271 cagccgcgtg cgcgccgggc agcgcgtgta cgtggtggct gaacgcggcg gggaccgccg 1260
273 gctgctgccc gccgcggtgc acagcgtgac gctgcgagag gaggaggcg ggcgctacgc 1320
275 gccgctcacg gcgcacggca ccattctcat caaccgggtg ctgcctcgt gctacgctgt 1380
277 catcgaggag cacagctggg cacaccgggc cttcgcgcct tccgcctgg cgcacgcgt 1440
279 gctggccgcg ctggcaccgc cccgcacgga cggcgggggc gggggcagca tccctgcagc 1500
281 gcaatctgca acggaagcga ggggcgcgga gccgactgcg ggcatccact ggtactcgca 1560
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293 ttttgaaatt tttcgttatt gtcttatatg ggtgtttttt ctctctcct ggctatttat 1920
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2716

324 &lt;210&gt; SEQ ID NO: 6

325 &lt;211&gt; LENGTH: 437

326 &lt;212&gt; TYPE: PRT

327 &lt;213&gt; ORGANISM: House Mouse

329 &lt;400&gt; SEQUENCE: 6

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331 Met Leu Leu Leu Leu Ala Arg Cys Phe Leu Val Ile Leu Ala Ser Ser
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336 20 25 30
339 Lys Arg Arg His Pro Lys Lys Leu Thr Pro Leu Ala Tyr Leu Gln Phe
340 35 40 45
343 Ile Pro Asn Val Ala Glu Lys Thr Leu Gly Ala Ser Gly Arg Tyr Glu
344 50 55 60
347 Gly Lys Ile Thr Arg Asn Ser Glu Arg Phe Lys Glu Leu Thr Pro Asn
348 65 70 75 80
351 Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Asn Thr Gly Ala Asp
352 85 90 95
355 Arg Leu Met Thr Gln Arg Cys Lys Asp Lys Leu Asn Ala Leu Ala Ile
356 100 105 110
359 Ser Val Met Asn Gln Trp Pro Gly Val Lys Leu Arg Val Thr Glu Gly

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368 145          150          155          160
371 Met Leu Ala Arg Leu Ala Val Glu Ala Gly Phe Asp Trp Val Tyr Trp
372          165          170          175
375 Gly Ser Lys Ala His Ile His Cys Ser Val Lys Ala Glu Asn Ser Val
376          180          185          190
379 Ala Ala Lys Ser Gly Gly Cys Phe Pro Gly Ser Ala Thr Val His Leu
380          195          200          205
383 Glu Gln Gly Gly Thr Lys Leu Val Lys Asp Leu Arg Pro Gly Asp Arg
384          210          215          220
387 Val Leu Ala Ala Asp Asp Gln Gly Arg Leu Leu Tyr Ser Asp Phe Leu
388 225          230          235          240
391 Thr Phe Leu Asp Arg Asp Glu Gly Ala Lys Lys Val Phe Tyr Val Ile
392          245          250          255
395 Gly Thr Leu Glu Pro Arg Glu Pro Leu Leu Leu Thr Ala Ala His Leu
396          260          265          270
399 Leu Phe Val Ala Pro His Asn Asp Ser Gly Pro Thr Pro Gly Pro Ser
400          275          280          285
403 Ala Leu Phe Ala Ser Arg Val Arg Pro Gly Gln Arg Val Tyr Val Val
404          290          295          300
407 Ala Glu Arg Gly Gly Asp Arg Arg Leu Leu Pro Ala Ala Val His Ser
408 305          310          315          320
411 Val Thr Leu Arg Glu Glu Glu Ala Gly Ala Tyr Ala Pro Leu Thr Ala
412          325          330          335
415 His Gly Thr Ile Leu Ile Asn Arg Val Leu Ala Ser Cys Tyr Ala Val
416          340          345          350
419 Ile Glu Glu His Ser Trp Ala His Arg Ala Phe Ala Pro Phe Arg Leu
420          355          360          365
423 Ala His Ala Leu Leu Ala Ala Leu Ala Pro Ala Arg Thr Asp Gly Gly
424          370          375          380
427 Gly Gly Gly Ser Ile Pro Ala Ala Gln Ser Ala Thr Glu Ala Arg Gly
428 385          390          395          400
431 Ala Glu Pro Thr Ala Gly Ile His Trp Tyr Ser Gln Leu Leu Tyr His
432          405          410          415
435 Ile Gly Thr Trp Leu Leu Asp Ser Glu Thr Met His Pro Leu Gly Met
436          420          425          430
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440          435
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444 <211> LENGTH: 3565
445 <212> TYPE: DNA
446 <213> ORGANISM: House Mouse
448 <400> SEQUENCE: 7
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